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10/092,789	03/07/2002	Robert J. Hennick	283-309.11	2965

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EXAMINER

KIM, AHSHIK

ART UNIT PAPER NUMBER

2876

DATE MAILED: 08/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/092,789

Applicant(s)

HENNICK ET AL.

Examiner

Ahshik Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03/07/02 (Initial filing of application).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5, 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continuation Data

1. Acknowledged this application is a continuation-in-part application of U.S. Serial No.
5 09/802,579, filed on March 8, 2001, now U.S. Patent 6,601,708, which is a continuation-in-part
application of U.S. Serial No. 09/411,936, filed on October 4, 1999. This application further
claims priority of provisional applications of U.S. Serial No. 60/301,036, filed on June 26, 2001,
60/322,776, filed on September 11, 2001, 60/327,249, filed on October 5, 2001, 60/328,855,
filed on October 12, 2001, and 60/345,523 filed on November 09, 2001.

10

Claim Objections

2. Claim 21 is objected to because of the following informalities:

Re claim 21, lines 2 "a machined away cavity" should be rephrased (i.e., machined-away
cavity or cavity created by a machine, etc.).

15

Appropriate correction is suggested.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

20

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
subject matter which the applicant regards as his invention.

3. Claim 13 recites the limitation "said retainer assembly" in claim 11. There is insufficient
antecedent basis for this limitation in the claim. It appears that Applicant might have meant
"said support assembly".

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Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

5 basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10 4. Claims 11 and 13-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Feng (US 6,123,263, cited by Applicant).

Re claims 11 and 16, Feng teaches an image module comprising a plurality of circuit boards 210, 214, 463 and 460; an image sensor in the form of two-dimensional photosensor array
15 202 mounted on the circuit board 210; an optic assembly 300 for focusing target indicia onto the photosensor array; a support assembly 302 that are integrally installed over several circuit boards; and a plurality of light sources 463b, 464b and 412 for targeting and illumination.

Re claim 13, Examiner assumes that “said retainer assembly” in claim 13 was perhaps meant to be written as “said support assembly” which is found in claim 11.

20 Re claim 14, one of PCBs used in Feng – 463 - is a flexible printed circuit board on which targeting light sources are installed. Accordingly, PCB 210 on which photosensor resides can be a flexible one as well.

Re claims 15 and 17, the targeting components 722 and 724 direct the light from the light source to target area (col. 17, lines 14+).

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Re claim 18, Feng further discloses a common optical plate 700 carrying optics for both aiming (722 and 724) and illumination assemblies (712a and 712b).

Re claim 19, as shown in figure 26, the illumination area is wider than the cross-haired target area.

5 Re claim 20, the apparatus further contains diffuser optics 712a and 712 b (col. 16, lines 28+).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

10 obviousness rejections set forth in this Office action:

15 (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-10 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feng (US 6,123,263, cited by the Applicant) in view of Arackellian et al. (US 5,504,367, cited by Applicant).

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Re claims 1, 8, and 21, Feng teaches an optical reader imaging module (see figure 9, col. 10, lines 50+) comprising a first circuit board 210 carrying a two dimensional image sensor in the form of a photosensor array 202, a second circuit board 463 spaced forwardly of the first circuit board, a support assembly (see figure 9) interposed between the first and second circuit boards, an aiming/targeting system comprising LEDs 464a and 464b mounted on a flexible PCB 463, and a third circuit board 460 on which illuminating module 414a and 414b are mounted. The image capture device 202 is a two-dimensional photosensor array.

Feng fails to specifically teach or fairly suggest that a circuit board contains both image sensor and aiming LEDs mounted on the circuit board.

Arackellian teaches an optical reader and illumination system (see abstract) comprising a printed circuit board 78 on which a detector assembly 45 including a detector array 46 and imaging optics 49 and a plurality of LEDs 76 are installed (see figure 3A and 3B, col. 3, lines 60+; col. 5, lines 23+).

In view of Arackellian's teaching, it would have been obvious to an ordinary skill in the art at the time the invention was made to employ one PCB containing both image capturing system and illuminating/targeting system in order to reduce size of the apparatus. Also by consolidating various components onto one board, production cost for an apparatus can be reduced. Since Feng or Arackellian does not explicitly disclose that a certain number of circuit boards have to be used in their respective apparatus, one ordinary skill in the art can choose to use one or more PCBs with various components parts installed on them. It is the Examiner's view that number of PCB (or circuit board) used in the apparatus alone is not a patentably distinct element unless one provides basis for a certain number of PCBs used.

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Re claims 2-4, 9, and 10, Feng further discloses a lens plate 700 carrying optics for both aiming (722 and 724) and illumination assemblies (712a and 712b). The optical plate 700 is disposed in abutting manner with the circuit board 460. The plate further contains diffusing optics 712a and 712b. The diffuser is composed of a group of half-circle shaped lens that are horizontally oriented. Since embodiment utilizes a convex (or positive) lens, one ordinary skill in the art can certainly use other type of lens (i.e., negative) as desired.

Re claim 5, the aiming pattern created by a targeting optics 450 creates a cross-hair pattern (see figure 26; col. 16, lines 61+) comprising horizontal lines and vertical lines.

Re claims 6 and 7, although Feng is silent on actual assembly of the component parts, as can be seen figures 11-14, the housing is equipped with grooves for PCBs and support for optical assembly, and other parts. It is the Examiner view that some parts are connected utilizing adhesives, screws, etc.

5. Claims 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Feng (US 6,123,263) in view of Salatto, Jr. et al. (US 5,420,411, "Salatto" hereinafter). The teachings of Feng have been discussed above.

Feng fails to specifically teach or fairly suggest that the imaging module further comprises a heat sink.

Salatto teaches a laser scanning apparatus (see abstract) further comprising a heat sink 64 (col. 6, lines 50+) to reduce the temperature of the apparatus during operation.

In view of Salatto's teaching, it would have been obvious to an ordinary skill in the art at the time the invention was made to employ notoriously well-known heat sink to the teachings of Feng in order to lower the temperature of the apparatus and extend the life of the reader. Heat

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sink or other temperature-lowering measure is well known in the art and widely used in the apparatus whose components generate heat. For instance, LEDs, laser light source, and other illuminating component of the scanner/optical reader generate heat during the scanning operation, which needs to be dissipated. Accordingly, installing heat sink as disclosed by Salatto would have been obvious modification, well within the ordinary skill in the art, and therefore an obvious expedient.

Conclusion

I. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Bunce et al. (US 5,598,007) discloses an optical reader comprising targeting optics and illuminating optics.


II. Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Ahshik Kim* whose telephone number is (703)305-5203. The examiner can normally be reached between the hours of 6:00AM to 3:00PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee, can be reached on (703) 305-3503. The fax number directly to the Examiner is (703) 746-4782. The fax phone number for this Group is (703)308-7722, (703)308-7724, or (703)308-7382.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [ahshik.kim@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



Ahshik Kim
Patent Examiner



KARL D. FRECH
PRIMARY EXAMINER

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August 7, 2003